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Striped Robe

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The idea for the kaftan-like garment, titled *Striped Robe*, is the result of a presentation given by the designers at Duke University's Nasher Museum in Durham NC, in conjunction with "Collecting Matisse and Modern Masters: The Cone sisters of Baltimore". In fall of 2012, the co-designers were invited to give a presentation on the relationship between textile heiresses Claribel and Etta Cone, and the sisters' patronage of Matisse and other emerging artists during the first half of the twentieth century. One particular exhibit masterpiece by Matisse, entitled "Striped Robe, Fruit and Anemones" (1940), inspired the designers to develop a modern interpretation of the garment depicted in the painting. The designers' objective was to interpret the garment using digital techniques for the both the textile and garment designs. Due to the collaborative nature of the research, a detailed timeline was created for historical research, material and process research, production, and knowledge dissemination.

The designers took artistic license when imagining the parts of the robe not depicted in the painting. Historical research, related to the styles of garments and fabrics to which Matisse had been exposed before 1940, assisted the designers when creating the unseen garment details. Matisse grew up surrounded by the textile industry in France and many of his paintings show an appreciation for fine woven fabric. In addition, beginning in 1906, the artist made many trips to North Africa and would have seen a variety of kaftans worn by indigenous people. Many of these kaftans and other Islamic styles of dress made their way into Matisse's work, such as his Odalisque-themed paintings carried out in the 1920s and 30s. The designers' decisions for motif placement and addition of the long side and sleeve slits with scalloped edges were based on this research.

To create the engineered textile design, the textile designer painted several floral and stripe motifs using a similar color palette as the Matisse painting. Care was taken to use the painting as solely as an inspiration and not copy the brushstrokes or composition exactly. The series of paintings were scanned into a CAD program and stored in a motif library within Lectra Kaledo Print. The repeat pattern of the painted stripe was also created in Lectra Kaledo print. The kaftan silhouette was developed using flat pattern software. A digital marker was brought into the CAD program so that textures and motifs, chosen from the digital motif library, could be digitally manipulated and in some instance, re-painted within the marker shape.

To ensure correct color reproduction of the digital print to the painted standard, and to maintain line quality and painting detail, a design of experiment was established to determine the optimum colorant and substrate combination. The variables tested in each of the experiments were, substrate, file format, and colorant. The three substrates used for printing were treated (for reactive printing) and untreated cotton sateen, and treated and untreated 30% silk 70% rayon satin, and untreated 100% silk habotai 5mm. The two sets of colorants used were: 1) an eight color reactive ink set of NOVACRON MI consisting of Turquoise MI-700, Red MI-500, Yellow MI-100, Black MI-900, Blue MI-600, Orange MI-300, and a 75/25% concentration of dye/diluent for Red MI- 500 and Turquoise MI-700; and 2) an eight color set of Yuhan Kimberley Nano Colorants consisting of cyan, magenta, yellow, black, blue, orange, grey and violet. CAD files were printed in LAB and RGB format. A printing process workflow was developed and adhered to, and the printed fabric samples were visually assessed for color by the designers using AATCC Evaluation Procedure 9-2010. In addition, the designers evaluated the print fabric based on, scale, line quality, visual texture, and overall appearance. Based on assessment the designers determined that the 30% Silk and 70% Rayon satin substrate printed with nano-pigments yielded the best results due to the fact the nano-pigments had little to no dithering, and effectively reproduced the fine line detail and gradient values of the painted



motifs. Although nano-pigments are typically not as saturated as reactive inks, the high sheen of the satin substrate produced a print that appeared to have high saturation. The textile design, engineered within the product shape, was then ink-jet printed onto the 30% Silk and 70% Rayon satin substrate with nano-pigments.

The strapless empire-style undergarment was bamboo-style pleated with industrial equipment. A thermoplastic fabric (100% polyester) was used for pleating to ensure a heat set finish. All seams were clean-finished, and the top of the undergarment was finished with a small blind-hem stitch before pleating to produce a lettuce-edge effect. The dimensions of the undergarment are: Bust 36.5", Waist 30", Low hips 38", Overall CF length 57". Kaftan dimensions (closed) are: Bust 40", Overall CB length 55".

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